

# Multi-habitat Freshwater Macroinvertebrate Protocol

## Field Guide

### Task

Collect macroinvertebrate samples from one or more of following habitat types: vegetated banks, submersed vegetation, snags, logs, roots, mud, sand, and gravel. The number of samples for each habitat type is proportional to the area that habitat type covers at your hydrology site. Collect a total of 20 samples.

### What You Need

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| <input type="checkbox"/> Freshwater Macroinvertebrate Identification Data Sheet  | <input type="checkbox"/> Sieve (0.5 mm or smaller) |
| <input type="checkbox"/> Hydrology Site Map  | <input type="checkbox"/> Latex gloves              |
| <input type="checkbox"/> Equipment and Hydrology Data Sheets for collection of water chemistry measurements (optional) | <input type="checkbox"/> Trowel or shovel          |
| <input type="checkbox"/> One to four spray bottles (1 to 2-L)  | <input type="checkbox"/> D-net                     |
| <input type="checkbox"/> Two to six 5-L white buckets  | <input type="checkbox"/> Calculator (optional)     |
| <input type="checkbox"/> 1 x 1 meter quadrat (for mud, sand and gravel habitats)                                       |  |

### In the Field

1. Locate the areas where you will collect your samples on your map and in the water.
2. Estimate the proportion of each accessible habitat type within your hydrology site.
3. Use the *Freshwater Macroinvertebrate Identification Data Sheet* to calculate the number of samples collected within each habitat type for a total of 20 samples.
4. If collecting water chemistry measurements, do before collecting macroinvertebrates. Be careful not to disturb the areas where you will be collecting macroinvertebrates.
5. Fill a bucket with water from the site
6. While holding the sieve over a second bucket, pour water through the sieve. Use the sieved water to fill (and refill as needed) the spray bottles. Keep sieved water in the shade.
7. Rinse sieve downstream of the sampling sites (or away from sites if water is not flowing).
8. Start macroinvertebrate sampling downstream and move upstream as you collect samples from different habitat types. If the water is not visibly moving, collect samples in the order that will minimize the impact of taking one sample on taking the others.

9. Use the *Field Guides* to collect samples in
  - submersed vegetation,
  - vegetated banks or around snags, logs, and roots,
  - muddy bottom, and
  - gravel and sand.
10. Record the number of samples taken in each habitat on the *Freshwater Macroinvertebrate Identification Data Sheet*. The total should be 20 samples. If the number of samples per habitat is different than what was planned, explain why in the comment section.